

SOT223, Housed Pt Temperature Sensor according to DIN EN 60751

Temperature range -50 °C to +150 °C

- Platinum sensor precision in SOT223 format
- Excellent long term stability
- High accuracy
- High vibration and shock resistance
- Optimized for soldering

The SOT223 is a Pt-RTD enclosed in an industry-standard SOT housing and is characterized by a linear resistance v. temperature response (as per DIN EN 60751), interchangeability, high long-term stability and accuracy. Designed for easy mounting in electronic assemblies and ideal for temperature compensation on PCBs, the SOT223 sensor is equipped with a cooling fin to enhance thermal contact with the PCB.

Nominal Resistance R_0 [Ω]	Tolerance Class	Order Number	Packaging
Pt1000	F 0.6 (2B)	32209116	Blister reel

Temperature Range of Tolerance Class

Validity of Class F 0.6 (2B) -50 °C to +150 °C
The specified tolerance classes refer to continuous operation.

Temperature Coefficient

TCR = 3850 ppm/K

Response Time

Water ($v = 0.4$ m/s):
 $t_{0.5} = 0.45$ s
 $t_{0.9} = 1.2$ s

Air ($v = 2$ m/s):
 $t_{0.5} = 8$ s
 $t_{0.9} = 26$ s

Measuring Current

Pt1000 Ω : 0.1 to 0.3 mA
(self-heating has to be considered)

Long-Term Stability

The drift of the resistance value at 0 °C after a storage for 1000 hours in air at the declared upper temperature limit is not more than the tolerance value of the declared tolerance class according DIN EN 60751. Typical drift of $R(0$ °C) is 0.06 % after 1000 hours at +150 °C.

Self-Heating

0.049 K/mW at 0 °C mounted on PCB
0.2 K/mW at 0 °C package only

Specific Volume Resistance

100 °C = 14×10^{14} Ω cm
150 °C = 0.3×10^{12} Ω cm

Physical Data For Housing

Material: duroplastic
Coefficient of thermal expansion: 12×10^{-6} 1 /K (below T_g)
Thermal Conductivity: 1.04 W/mK
Moisture absorption: Boiling water (48 hours) < 1.0 %

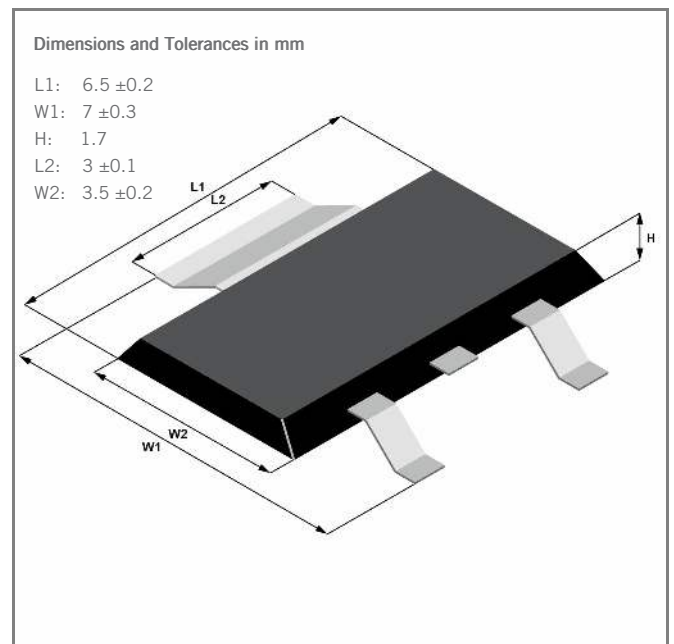


Image for illustration purposes only
The wide connection lug is used for heat transfer

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Temperature range -50 °C to +150 °C

Flammability

UL94-V0

Soldering Connection

Cu alloy with Sn coating

Connection Technology

Soft Soldering

Packaging

Blister reel

Alternative packaging forms on request

Storage Life

9 months (in original packaging).

Nitrogen atmosphere recommended

Note

Other tolerances and values of resistance are available on request

California Proposition 65



WARNING

WARNING: This product can expose you to chemicals including carbon black, which is known to the State of California to cause cancer.

For more information go to www.p65warnings.ca.gov



The information provided in this data sheet describes certain technical characteristics of the product, but shall not be qualified or construed as quality guarantee (Beschaffenheitsgarantie) in the meaning of sections 443 and 444 German Civil Code. The information provided in this data sheet regarding measurement values (including, but not limited to, response time, long-term stability, vibration and shock resistance, insulation resistance and self-heating) are average values that have been obtained under laboratory conditions in tests of large numbers of the product. Product results or measurements achieved by customer or any other person in any production, test, or other environment may vary depending on the specific conditions of use.

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